SITE INVESTIGATION REPORT

ST SERVICES – MACON TERMINAL
AREA 2 - BARNES FERRY ROAD – ROBBINS AFB PIPELINE

32^0 43.916' NL and 83^0 37.872 WL
Bibb County, Georgia

NOVEMBER 2002

Prepared For:

ST SERVICES
17304 Preston Road
Dallas, TX 75252

Prepared By:

Cody Ehlers Group
101 N. Woodland Boulevard
Suite 205
Deland, FL 32720

Cody Ehlers Group
EHS Consulting and Services

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Adrian W. Kent, P.G.

Cody Ehlers Group
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1.0 INTRODUCTION

Cody Ehlers Group (CEG) was authorized by ST Services (ST) to conduct an investigation at the facility located in Bibb County, Georgia (the Site). This investigation described in this report was designed to investigate soil and ground water contamination along the pipeline alignment near Barnes Ferry Road. The portion of the ST Services pipeline addressed in this work plan is located at approximately 32^0 43.916' north latitude and 83^0 37.882' west longitude (**Figure 1**). The site is in an area of farms and single family rural residences. The site is located adjacent to Barnes Ferry Road approximately 1.4 miles east of US Highway 129.

This investigation was conducted in accordance with a Site Investigation Work Plan prepared in response to correspondence from the Georgia Environmental Protection Division (GAEPD) dated December 20, 2001. The work plan was submitted in February 2002 and approved with minor modifications by GAEPD in March 2002. Site work was accomplished between April 15th and 23rd, 2002.

1.1 Purpose and Objectives

The principal purpose of the investigation is to understand site conditions so that potential impacts from hydrocarbons in soil adjacent to Barnes Ferry Road may be understood and information gathered to assist in the assessment of any impacts that may have occurred. Specific conditions of interest that need to be understood to achieve these goals include site geology and hydrology, the distribution of contaminants of concern, their fate and transport mechanisms, and nearby sensitive environmental and public health populations identified as potential receptors.

1.2 Site Description

The ST Services facility at the origin of the pipeline is a bulk fuel storage facility that currently supplies Jet-8 turbine fuel to Robins Air Force Base. No other petroleum products are currently shipped via this pipeline. Historically JP-4 was shipped via this pipeline to Robins Air Force Base. The terminal consists of seven above ground storage tanks (ASTs), associated piping and pumps, and a loading rack to service tractor-trailer fuel carriers. The fuels are supplied by Plantation Pipeline Company (Plantation) located north of the facility.

The pipeline exits the ST Services Bulk Fuel Storage Facility and runs south on the west side of Hawkinsville Road (Highway 247). The pipeline then proceeds under US Highway 247 and runs along the south side of Barnes Ferry Road. The pipeline then runs south following Barnes Ferry Road, across Griffin Road and across an open field to Feagin Road. The pipeline then follows the south side of Feagin Road and ultimately enters Robins Air Force Base.

2.0 GEOLOGIC SETTING

Section 2.0 presents the current understanding of the Site, including the regional and site-specific geologic and hydrogeologic setting, the known types and distribution of contaminants, and the nearby sensitive receptors.

2.1 Previous Investigative and Remedial Actions

Investigations or remedial activities have not occurred in this area.

2.2 Geologic and Hydrogeologic Setting

The site is located within the Fall Line Hills physiographic subprovince of the Coastal Plain Province (LeGrand 1962). The site area is characterized by low rounded hills separated by drainage features tributary to Ocmulgee River. Tobesofkee Creek lies approximately one-mile northeast of the site, while the floodplain of the Ocmulgee River lies 1.6 miles east of the site. Elevation at the site is approximately 325 feet (Figure 1) Topography slopes gently southeast towards Johns Branch, an intermittent stream. Ditches are located on both sides of Barnes Ferry Road

2.2.1 Regional Geology

Cretaceous age sands and clays of the Tuscaloosa formation underlie the site. Most of the private wells in the site vicinity are screened in the Tuscaloosa formation, which is considered a good aquifer in the area and provides water supply to both domestic and municipal users (LeGrand 1962). There are several sand layers that provide adequate water for most purposes. Based on information provided by a local driller the depth to the underlying crystalline rock is over 300 feet.

2.2.2 Regional Hydrogeology

The Georgia Hydrologic Atlas 20, "Ground Water Pollution Susceptibility Map of Georgia" shows the site as lying within a higher susceptibility area. The area is identified on the Georgia Hydrologic Atlas 18 as within the recharge area for the Cretaceous-Tertiary aquifer system.

3.0 FIELD INVESTIGATION AND RESULTS

3.1 Introduction

Site investigation activites were conducted between April 15th and 23rd, 2002. Investigation methods and techniques employed were in accordance with the approved Site Investigation Work Plan submitted to GAEPD in February 2002.

3.2 Investigation Program

Elements of the implemented work plan to investigate the existence of hydrocarbons at the site included:

Geoprobe Borings

- Mobilization of a truck mounted Geoprobe™ to attempt to identify the probable areal extent of significant soil contamination and/or source areas along Barnes Ferry Road. Boring locations are shown on **Figure 2.** All borings were appropriately abandoned by backfilling with pelletized bentonite. The Geoprobe™ borings were advanced to a depth of approximately 10 feet, except for borings 12, 29, 31, and 34, which were advanced to approximately 42 feet below grade.
- An OVA/PID was utilized to screen soil samples. Selected representative samples were submitted to a certified analytical laboratory for verification anaconsist of lysis. The samples were analyzed for EPA Methods 8021B (purgeables), 8100 (polynuclear aromatic hydrocarbons) and 9073 (TPH).
- Groundwater was collected from four locations (B-12, 29, 31, and 34) (Figure 2). Groundwater collected was analyzed by EPA Method 602 (Volatile Aromatics) and EPA Method 610 (Polynuclear Aromatic Hydrocarbons and lead.

3.2 Investigation Results

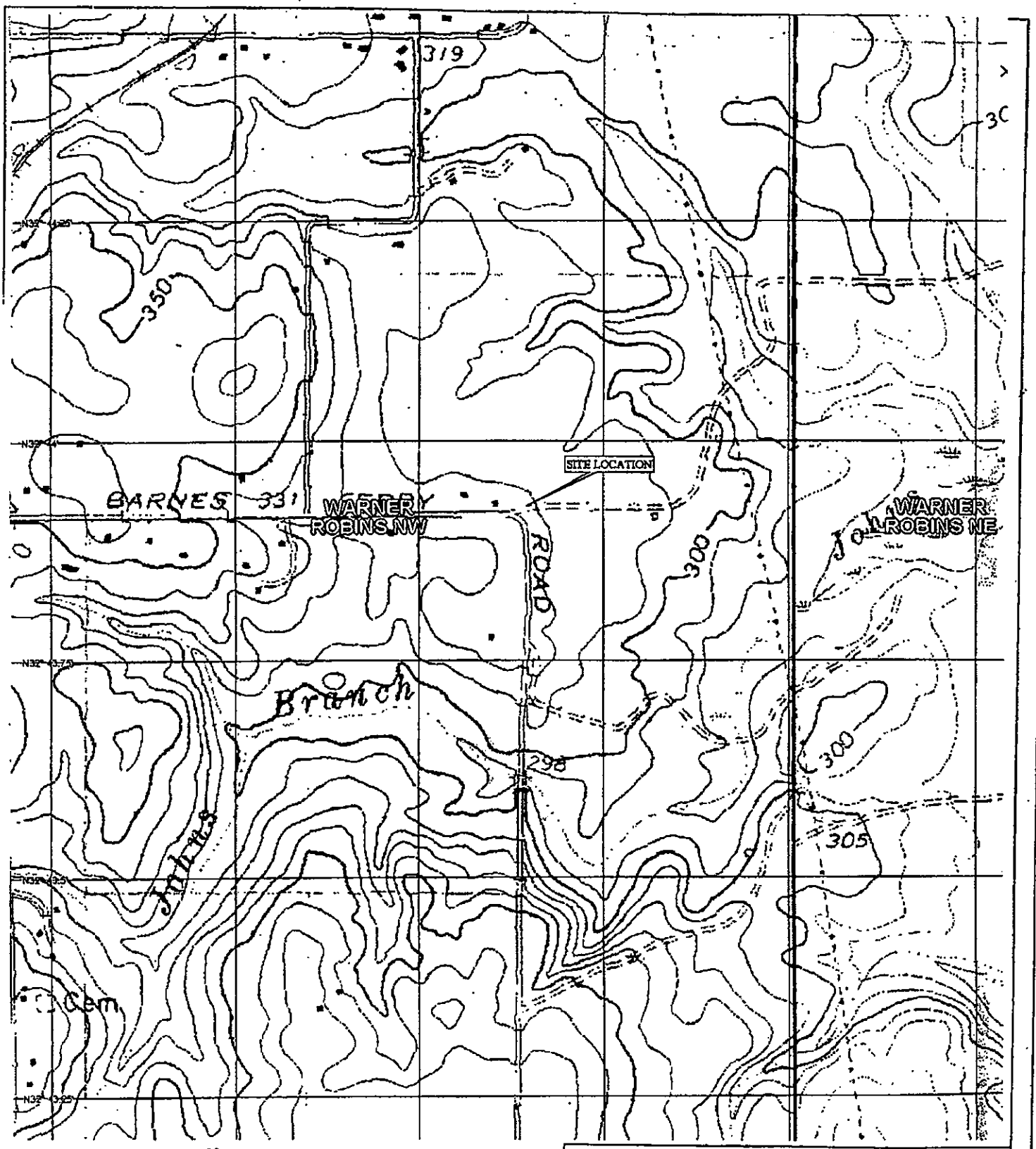
- Soils encountered at the site generally consisted of dry mottled clays of varying colors and sand content to approximately 25 feet below land surface. Gray clay (possibly kaolin) occurs between a depth of 24 to 27 feet below grade. From 27 feet the gray clay grades into a brown fine to medium sand at around 36 feet, where saturation with ground water was observed. Descriptions of soil samples are included as Appendix A to this report.
- None of the samples collected between land surface and 10 feet below grade exhibited a positive response for hydrocarbon vapors using the OVA/PID. OVA/PID readings are shown on the boring logs in Appendix A. Representative samples were submitted for laboratory analyses, B-29@5' and B-34@3.5'. EPA method 8021 and 8100 compounds were not detected in either sample. TRPH by method 9073 was detected in each sample at 6.5 mg/kg. Analytical data sheets are included in Appendix B.

- Hydrocarbon compounds were detected in each of the ground water samples collected. Groundwater from B-29 had the highest reported concentration of EPA 602 compounds (10,030 ug/l). The only EPA Method 610 compound reported was naphthalene (19 ug/l) from B-29.
- No sensitive receptors were identified in the immediate study area. An abandoned and burned farmhouse, located approximately 1000 feet SSW of the study area may have an abandoned private well. A vacant home North of Barnes Ferry Road and approximately 500 feet east of the south bend of Barnes Ferry Road was razed during the investigation. No private supply well was visually located at this house.

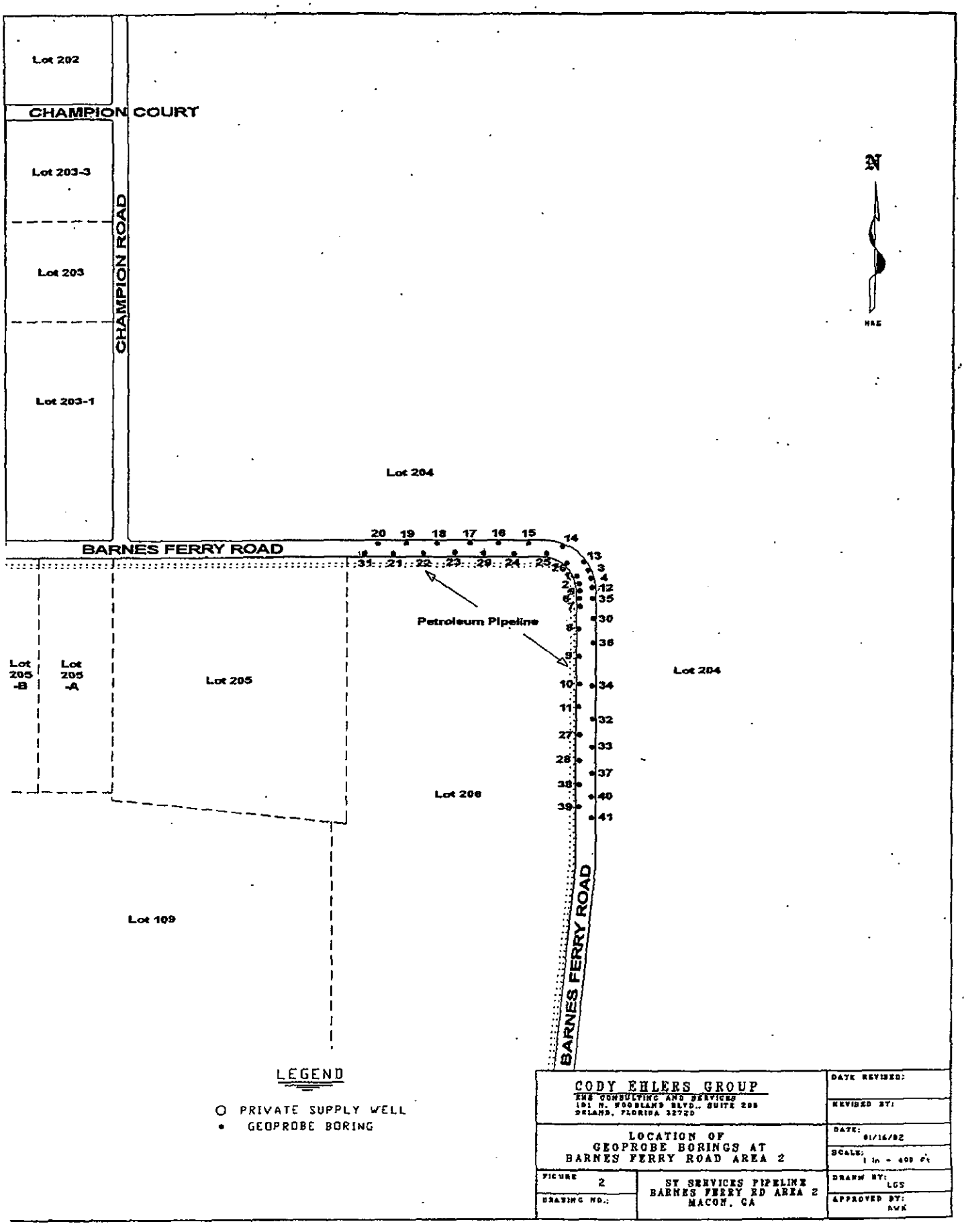
3.3 Conclusions and Recommendations

No significant source of hydrocarbon contamination was discovered adjacent to the existing petroleum pipeline to a depth of 10 feet on either side of Barnes Ferry Road in the area of study. All four of the ground water samples collected were impacted by hydrocarbon compounds, suggesting that a source outside of the study area is possible. Further groundwater assessment is warranted to investigate the extent of impacted groundwater and to evaluate potential source areas. A meeting between GAEPD and ST Services personnel to discuss the scope of additional investigation is warranted prior to conducting further site activities.

FIGURES



CODY EHLERS GROUP EHE CONSULTING AND SERVICES 101 N. WOODLAND BLVD., SUITE 200 DELAND, FLORIDA 32720		DATE REVISED:
		REVISED BY:
SITE LOCATION MAP FOR BARNES FERRY ROAD AREA 2		DATE: 01/15/02 SCALE: 1 in = 925 Ft
FIGURE 1 DRAWING NO.:	ST SERVICES PIPELINE BARNES FERRY RD AREA 2 MACON, GA	DRAWN BY: LGS APPROVED BY: AVE


Lot 202
CHAMPION COURT
Lot 203-3
CHAMPION ROAD
Lot 203
Lot 203-1
N
Lot 204
BARNES FERRY ROAD
20 19 18 17 16 15 14
13 3 4 12 35 30 36 34 32 33 37 40 41
1 2 6 7 8 9 10 11 27 28 38 39
Petroleum Pipeline
Lot 205 -B
Lot 205 -A
Lot 205
Lot 204
Lot 206
Lot 109
BARNES FERRY ROAD
LEGEND
O PRIVATE SUPPLY WELL
• GEOPROBE BORING
CODY EHLERS GROUP
ENE CONSULTING AND SERVICES
101 N. WOODLAND BLVD., SUITE 208
DELAND, FLORIDA 32720
DATE REVISED:
REVISED BY:
LOCATION OF
GEOPROBE BORINGS AT
BARNES FERRY ROAD AREA 2
DATE: 01/16/02
SCALE: 1 in = 400 ft
FIGURE 2
DRAWING NO.:
SY SERVICES PIPELINE
BARNES FERRY RD AREA 2
MACON, GA
DRAWN BY: LGS
APPROVED BY: AWK

TABLES

Table 1

Analytical Results in Groundwater
April 2002

ST Services, Macon,Georgia
Barnes Ferry Road - Area 2

Sample ID	B-12	B-29	B-31	B-34
Purgeables (602)*				
Benzene	3.8	70	<0.2	<0.2
Ethyl Benzene	1.5	1650	<0.2	2.9
Toluene	9.2	4220	5.6	1.6
Xylenes	17	4070	26.7	10.4
MTBE	<0.1	20	<0.1	<0.1
BTEX	31.5	10030	32.3	14.9
Polynuclear Aromatics (610)*				
Naphthalene	<2.8	19	<1.4	<1.4
Lead (239.2)	7	16	30	52

* Note: Results reported in ug/l
NA = not analyzed
ND = not detected

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November 21, 2002

Mr. Jim Guentert, P.G.
Georgia Geological Society, Room 400
19 Martin Luther King, Jr. Drive SW
4th Floor
Atlanta, GA 30334

Subject: **Site Investigation Report**
ST Services – Macon Terminal
Area 3 - Feagin Road

Dear Mr. Guentert:

The above referenced report is submitted on behalf of ST Services for your review and comment. Should you have any questions, please call.

Sincerely,

Cody Ehlers Group

Adrian W. Kent, P.G.
Project Director

Cc: Dylan Morgan, ST Services - JAX
Eddie Nobles, ST Services - Macon
Jim Siciliano, ST Services – Dallas

Attachment

SITE INVESTIGATION REPORT

ST SERVICES – MACON TERMINAL
AREA 3: FEAGIN ROAD – ROBINS AFB PIPELINE

32° 42' 075" NL and 83° 37.715 WL
Bibb County, Georgia

NOVEMBER 2002

Prepared For:

ST SERVICES
17304 Preston Road
Dallas, TX 75252

Prepared By:

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Deland, FL 32720

Cody Ehlers Group
EHS Consulting and Services

SITE INVESTIGATION REPORT

ST SERVICES – MACON TERMINAL
AREA 3 FEAGIN ROAD – ROBINS AFB PIPELINE

32° 42.075' NL and 83° 37.715 WL
Bibb County, Georgia

NOVEMBER 2002

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2.0 CURRENT UNDERSTANDING OF SITE CONDITIONS

Section 2.0 presents the current understanding of the Site, including the regional and site-specific geologic and hydrogeologic setting, the known types and distribution of contaminants, and the nearby sensitive receptors.

2.1 Previous Investigative and Remedial Actions

Mrs. Magnolia McClendon reportedly called the ST Services terminal manager, Mr. Wayne James, on August 25, 1981 and reported her suspicion that petroleum products had contaminated her drinking water well. She stated that the well was an "open" well and was 106 feet deep. Water was collected from the well and analyzed by Southeast Laboratories, Inc., in Atlanta, GA. The exact type of analysis was not reported on the laboratory sheet dated September 25, 1981. The lab report stated that "the oil contaminate indicates low boiling hydrocarbons of a narrow cut, not similar to JP-4 or diesel fuel". Water from the well was also analyzed by Law & Company of Atlanta, GA and reported on 8/26/81. The report stated that "this sample contains gasoline at approximately 10 to 20 ppm".

Preston Testing & Engineering Co., Inc. (Preston) conducted a site investigation concerning the subject site beginning in October 1991, continuing through April of 1992. During the activities conducted for the report, five soil borings and two monitoring wells were installed. The borings were located in various locations on the McClendon Property.

Several soil samples were analyzed for oil and grease from the five borings. The reported values ranged from less than 10 ppm to 1450 ppm. The highest value was reported from B-2 at a depth of 40 feet. Depth to groundwater ranged from 58 feet in B-1 to 14.6 feet in B-4. Groundwater from B-1 was submitted for analysis for oil and grease. Two samples were analyzed with a reported value of 13ppm and 33 ppm.

2.2 Geologic and Hydrogeologic Setting

The site is located within the Fall Line Hills physiographic subprovince of the Coastal Plain Province (LeGrand 1962). The site area is characterized by low rounded hills separated by drainage features tributary to Ocmulgee River. An unnamed intermittent stream lies approximately 0.5 miles north of the site, while Ocmulgee River lies 1.5 miles east of the site. Elevations at the site range from 375 feet msl to less than 300 feet msl near the intermittent stream north of the site. The area along Feagin Road is relatively flat. Topography slopes gently towards the north and east, with the slope increasing dramatically in the proximity of the intermittent stream and the Ocmulgee River floodplain to the north and east respectively. Drainage ditches are located on the north and south side of Feagin Road.

2.2.1 Regional Geology

Cretaceous age sands and clays of the Tuscaloosa formation underlie the site. Most of the private wells in the site vicinity are screened in the Tuscaloosa formation, which is considered a good aquifer in the area and provides water supply to both domestic and municipal users (LeGrand 1962). There are several sand layers that provide adequate water for most purposes.

2.2.2 Regional Hydrogeology

The Georgia Hydrologic Atlas 20, "Ground Water Pollution Susceptibility Map of Georgia" shows the site as lying within a higher susceptibility area. The area is identified on the Georgia Hydrologic Atlas 18 as within the recharge area for the Cretaceous-Tertiary aquifer system.

2.2.3 Site Hydrogeology

Within the site itself, groundwater is encountered at a depth of 58 to 14.6 feet bgs (Preston, 1982) and appears to correspond with variations in elevation. The materials reportedly encountered in the borings are predominantly sands, sandy clays and gravel, silts and kaolin clays. From information contained in the boring logs the actual strata that is the water producing zone or zones could not be determined and wells in the area may penetrate more than one production zone.

Prior to the current investigation, groundwater elevations had not been measured at the site and groundwater flow direction was not known.

3.0 FIELD INVESTIGATION AND RESULTS

3.1 Introduction

Site investigation activites were conducted between April 22nd and September 17th, 2002. Investigation methods and techniques employed were in accordance with the Site Investigation Work Plan submitted to GAEPD in February 2002.

3.2 Investigation Program

Elements of the implemented work plan to investigate the existence of hydrocarbons at the site included:

Geoprobe Borings

- Mobilization of a truck mounted Geoprobe™ to attempt to identify the probable areal extent of significant soil contamination and/or source areas along Feagin Road. Boring locations are shown on **Figure 2.** All borings were appropriately abandoned by backfilling with pelletized bentonite. The Geoprobe™ borings were advanced to a depth of approximately 10 feet. Boring Logs are included as Appendix A.
- An OVA/PID was utilized to screen soil samples. Selected representative samples were submitted to a certified analytical laboratory for verification analysis. The samples were analyzed for EPA Methods 8021B (purgeables), 8100 (polynuclear aromatic hydrocarbons) and 9073 (TPH).

Soil Borings

- Five soil test borings were installed during the field investigation (**Figure 2**). Boreholes for soil samples and monitoring wells were advanced using mud rotary drilling methods utilizing a drill bit capable of constructing an 8-inch minimum borehole. The augers and down-hole tools will be steam cleaned prior to mobilization and arrive on-site suitably covered and ready for use. Augers, bits, and down-hole tools were cleaned between boreholes with detergent, rinsed with tap water and steam cleaned to minimize the risk of cross contamination. The blow count, percent recovery and a lithologic description was recorded for each sample interval. Split spoon samples were collected at five-foot intervals as a minimum. Boring Logs are included in Appendix A.

- Split spoon sampling tools and drill rod used were steam cleaned after each use. The boreholes were advanced to depths between 70 and 110 feet below land surface to assess site geologic conditions in deeper strata.

Monitor Well Installation

- Five monitoring wells to depths between 72 and 110 feet were installed in the approximate locations shown on **Figure 2.** Monitoring Well Details are shown on **Figure 3A-3E.** Screened intervals varied from well to well depending on the widely varying lithology. Monitoring wells B, D, and E were installed inside an 8-inch Schedule.40 PVC outer casing to preclude the possibility of carrying down

hydrocarbon impacted soil into the water table. These wells were constructed of 4-inch diameter Schedule 40 PVC. These monitoring wells were designed to investigate soil and groundwater quality in the area of the suspected discharge. All drilling and development fluids were collected, properly stored and disposed. Proper decontamination procedures were undertaken to ensure that cross-contamination did not occur during well construction. Boring and well construction followed the procedures submitted in the Site Investigation Work Plan as Appendix C - SOP for Drilling.

- During installation of the monitoring wells, soil samples were collected at a minimum of 5-foot intervals to completion depth using a split spoon sampler, or direct push methods. The soils were screened using an OVA/PID in the field. Representative soil samples were submitted for chemical analysis. The soils were analyzed by EPA Methods 8021B (purgeables), 8100 (polynuclear aromatic hydrocarbons) and 9073 (TPH). The results of these analyses are included in Appendix B. A soil sample from three selected well screen location collected during boring construction was sampled for organic carbon to help predict the distribution coefficient (Kd) for evaluating transport of organic constituents. Analytical Results are included in Appendix B and summarized in Table 1.

- The five newly installed monitoring wells (MWs A-E) and an existing well (MW-F) on adjacent Bibb County property were sampled during the course of this investigation. Initially all of the wells had a measurable water column. After purging, however, MW-A did not recover sufficient water to allow sampling. MW-F is located nearby this location, and was added to augment data collected from the remainder of the site wells. Well construction details for MW-F, compliments of the Bibb County Airport Industrial Authority are included in Appendix A. Water collected was analyzed by EPA Method 602, 610, and for lead. Analytical results are included in Appendix C and summarized in Table 2.

3.2 Investigation Results

Geoprobe Borings

- Shallow soils (upper 10 feet) encountered during installation of the Geoprobe Borings (Figure 2) at the site generally consisted of dry mottled red clays with some varying minor amounts of sand and gravel.
- None of the samples collected between land surface and 10 feet below grade in the geoprobe borings exhibited a positive response for hydrocarbon vapors using the OVA/PID, except for a reading of 11.2 PPM in Boring B-9. OVA/PID readings are shown on the boring logs in Appendix A.

Soil Borings

- In general the strata observed in the deep soil borings consisted of predominantly red sandy clays to depths of approximately 20 to 30 feet below land surface. These clays have interbedded sand layers, mostly brown to tan in color that were remarkably dry, reflecting the on-going severe drought conditions in the area. The sediments below

this level tended to decrease in clay content and consisted of interbedded silty sands with varying amounts of fine gravel. Competent white clay, probably of kaolinite mineralogy, was reported in three of the borings. The saturated sediments encountered varied greatly in depth (from 65 to 100 feet below grade). Water was observed in sandy clays and sand layers with some gravel content.

- Hydrocarbon compounds were detected in each of the soil samples collected for analysis (Table 1). Each of these soil samples was collected from strata occurring at or just above the depth where soil samples were observed as saturated. The highest concentrations were reported from soils collected at MW-B at a depth of 50-55 feet below land surface. No natural organic carbon was detected in any of the soil samples analyzed from the well screened intervals.

Groundwater Sampling and Elevations

- Tops of surface casing elevations were measured relative to a common vertical datum. Depth to water measurements were collected so that relative groundwater elevations could be assessed. Depths to water and corresponding relative groundwater elevations are shown on Table 3. Possibly due to the variation and length in screened interval from well to well, groundwater elevations varied greatly from well to well. Groundwater flow direction could not be determined from these data. Regional groundwater flow is expected, based on topography, to be east to northeast in the direction of the Ocmulgee River.
- Results of groundwater analyses are included in Appendix C and are summarized in Table 2. As previously noted, MW-A did not recover sufficient water to sample. No organic compounds analyzed for were detected in MW-C and F. EPA Method 602 (VOAs) compounds were detected in MW-B, D, and E. The highest concentrations were found in MW-D with 7,000 ug/L of benzene and 23,100 ug/L of Total Volatile Organic Aromatic compounds. EPA Method 610 (PAHs) compounds were detected in MW-D and E. MW-D reported the highest concentrations of organic constituents in groundwater with 1,900 ug/L of naphthalene and 12,000 Total Polyaromatic Hydrocarbons.

Sensitive Receptors

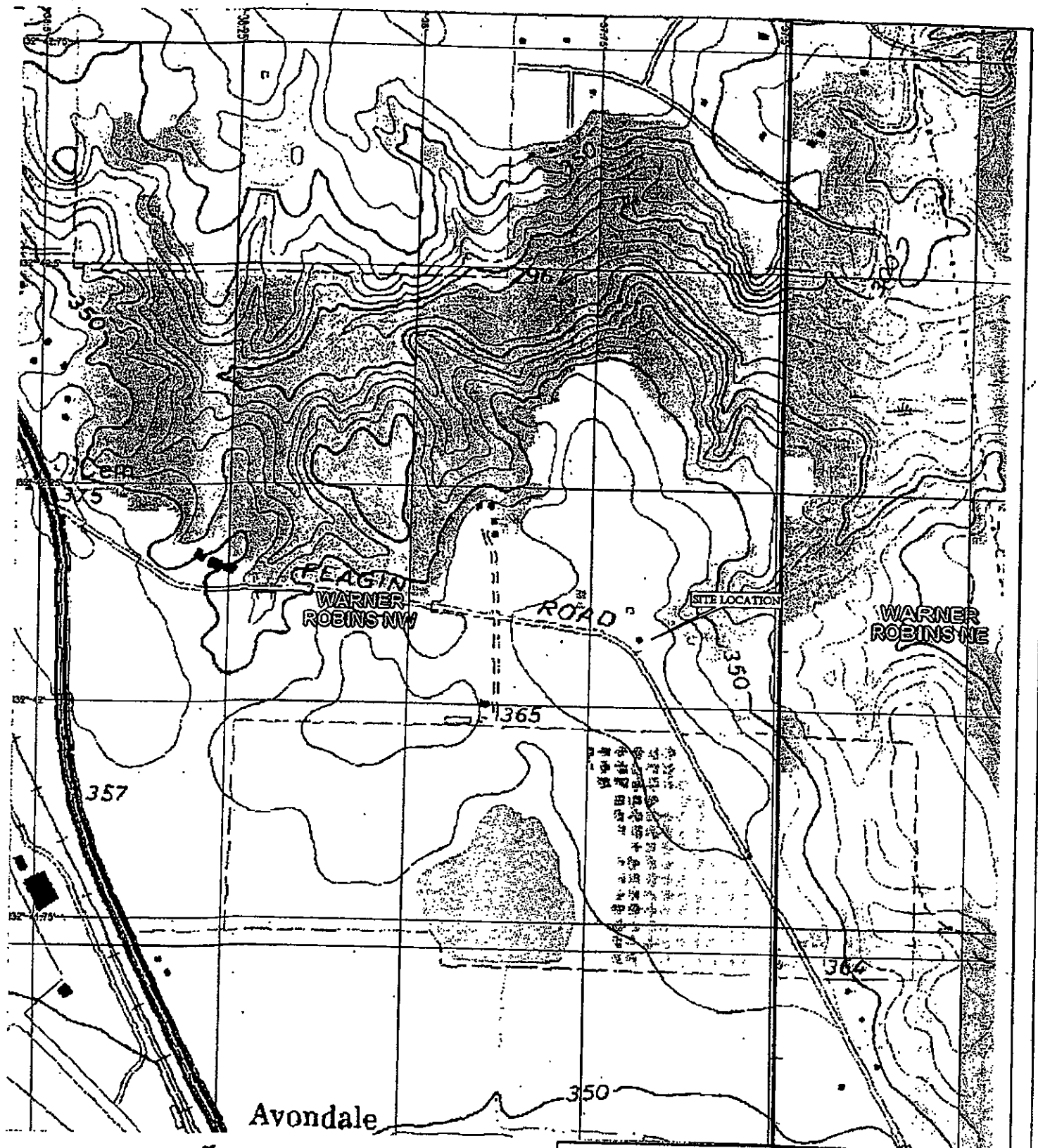
- Potential sensitive receptors were identified in the immediate study area. A private dwelling located on Lot 402 (Figure 2) appears to utilize groundwater from a private well. Private wells are also potentially utilized by a dwellings located north of Lot 402 and Feagin Road on a private access road. Lot 101 contains the abandoned well, that was impacted historically as noted in **Section 2.1** of this report.

3.3 Conclusions and Recommendations

- No significant source of hydrocarbon contamination was discovered adjacent to the existing petroleum pipeline to a depth of 10 feet near Feagin Road and on ST Services right-of-way in the area of study. This strongly suggests that no ongoing near-surface source for hydrocarbon contamination exits in the study area. The occurrence of impacted soils at depths near the groundwater surface suggests that the detected contamination is likely the result of historic release events.

- Three of the five groundwater samples collected were impacted by hydrocarbon compounds. Further soil and groundwater assessment is warranted to investigate the extent of impacted groundwater and to evaluate potential source areas. The impacted soils detected in MW-A, B, and E suggest that the study area be expanded north and east of the existing study area.
- Off-site access should be sought to sample all potable wells identified in the area and to expand the area of study.
- A meeting between GAEPD and ST Services personnel to discuss the scope of additional investigation is warranted prior to conducting further site activities.

FIGURES



CODY EHLERS GROUP ENR CONSULTING AND SERVICES 101 N. WOODLAND BLVD., SUITE 205 DELAND, FLORIDA 32720		DATE REVISED:
		REVISED BY:
SITE LOCATION MAP FOR FEAGIN ROAD		DATE: 01/16/02
		SCALE: 1 in = 935 Ft
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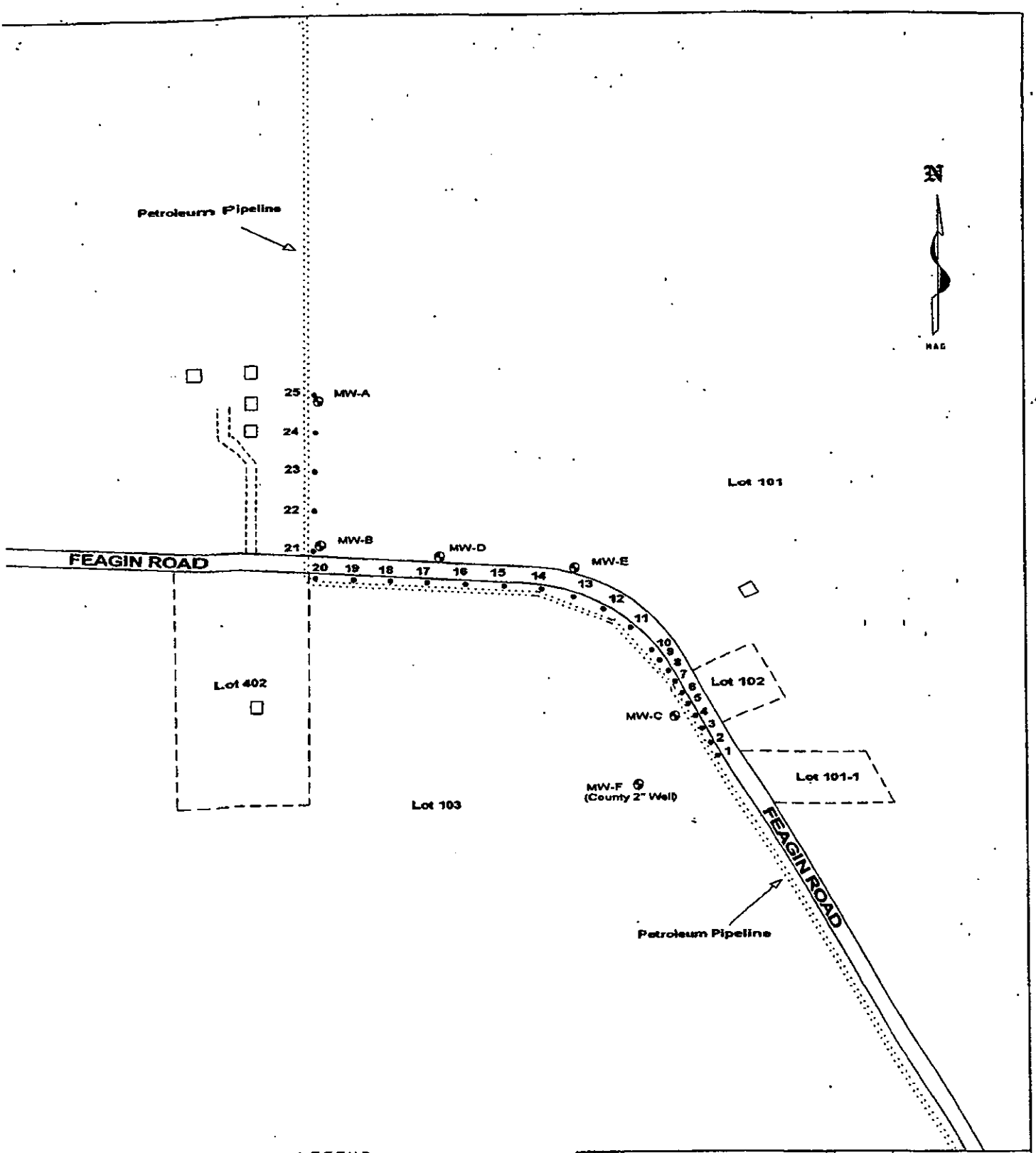
DRAWING NO.:		APPROVED BY: AVK

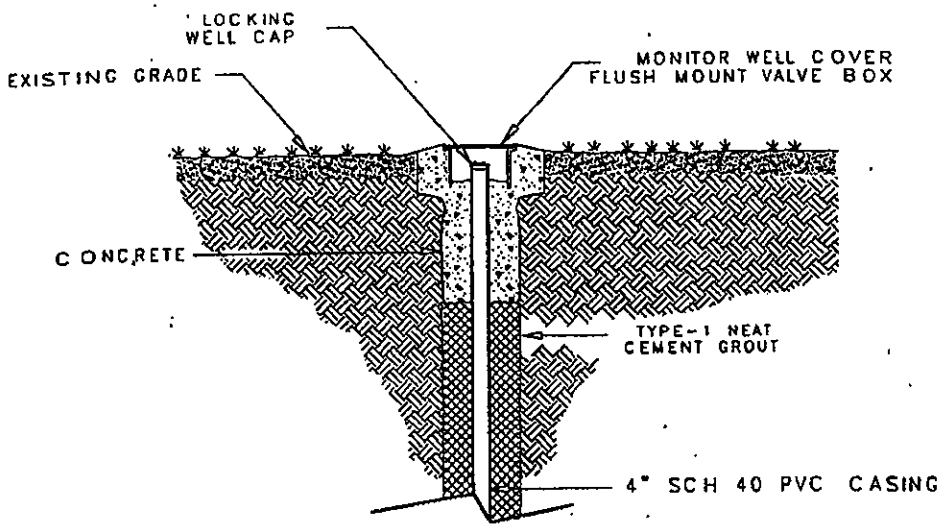


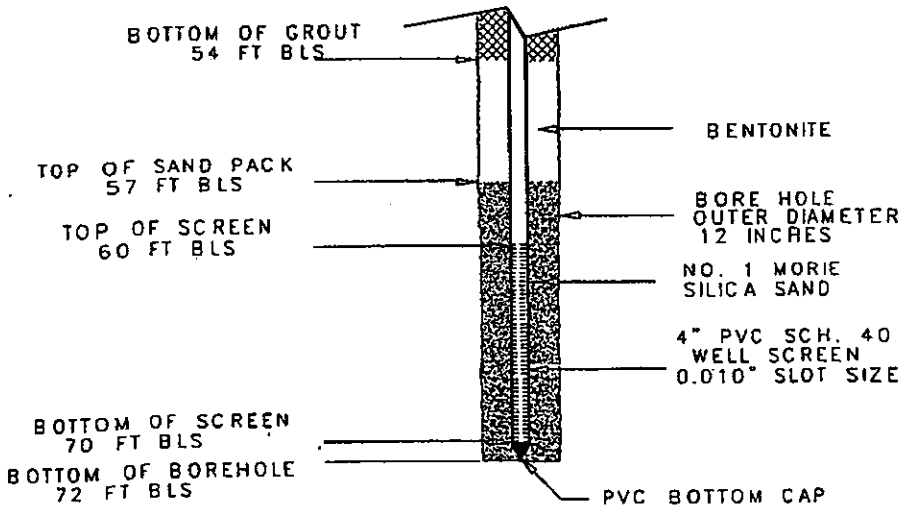
LEGEND

- ○ PRIVATE SUPPLY WELL
- ⊕ MONITORING WELL
- • GEOPROBE BORING

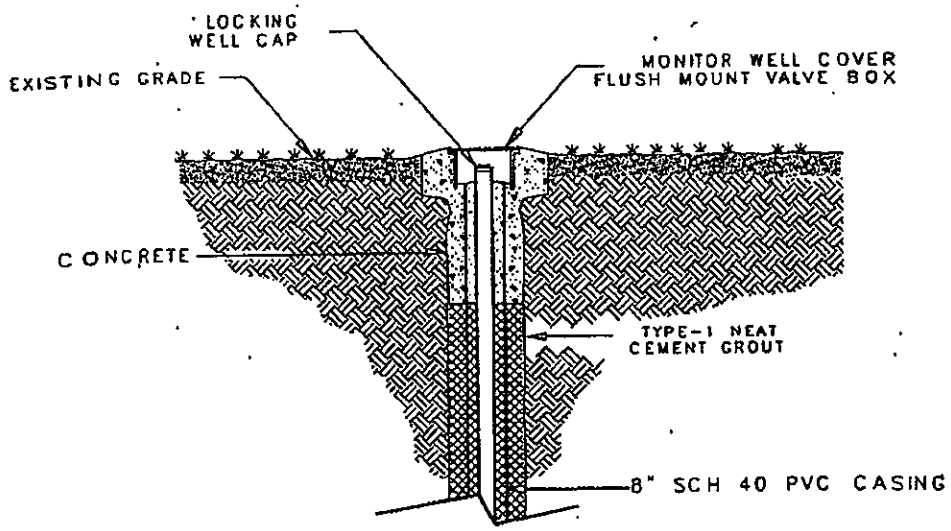
Note: Lot Nos. apply to map Q14 or R14.

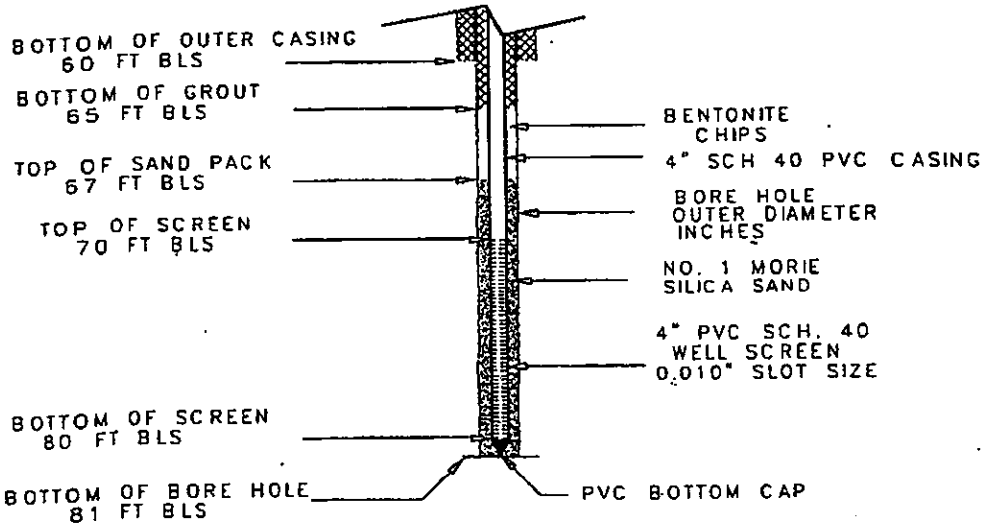
CODY EHLERS GROUP ENE CONSULTING AND SERVICES 101 N. WOODLAND BLVD., SUITE 206 DELAND, FLORIDA 32720	DATE REVISED: REVISED BY:
LOCATION OF BORINGS AND WELLS AT FEAGIN ROAD	DATE: 02/03/02 SCALE: 1 in = 400 ft
FIGURE 2 DRAWING NO.:	ST SERVICES PIPELINE FEAGIN ROAD MACON, GA	DRAWN BY: LCS APPROVED BY: AVK





CODY EHLERS GROUP ENV CONSULTING AND SERVICES 161 N. ORANGE BLVD., SUITE 206 ORLAND, FLORIDA 32720	DATE REVISED:
	REVISED BY:
MONITOR WELL MW-A DETAIL	DATE: 9/12/02
	SCALE: NTS
FIGURE 3A	DRAWN BY: LGS
DRAWING NO.:	APPROVED BY: AWK
ST SERVICES PIPELINE FEAGIN ROAD MACON, GA	





CODY EHLERS GROUP ESE CONSULTING AND SERVICES 101 N. WOODLAND BLVD., SUITE 255 DELAND, FLORIDA 32720	DATE REVISED: REVISED BY:
MONITOR WELL MW-B DETAIL	DATE: 9/12/02 SCALE: NTS
FIGURE 3B DRAWING NO.:	ST SERVICES PIPELINE PEACHN ROAD MACON, GA
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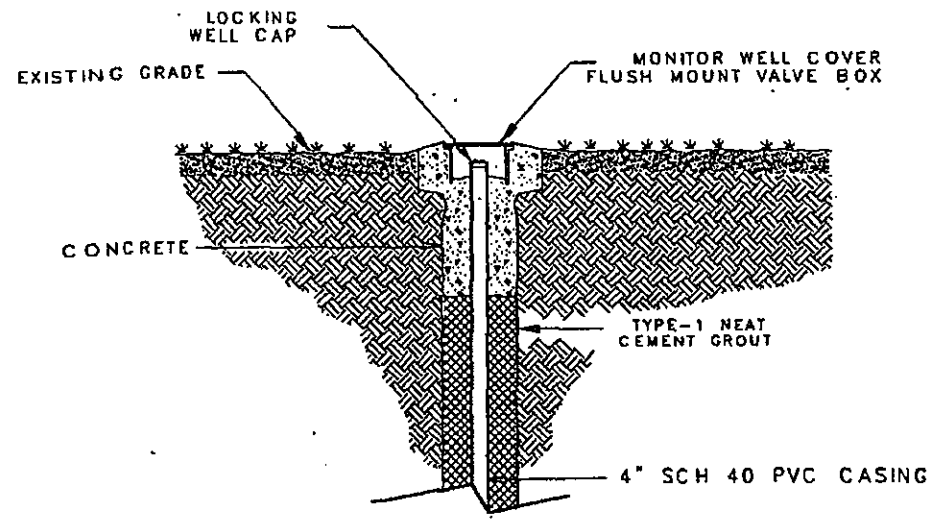
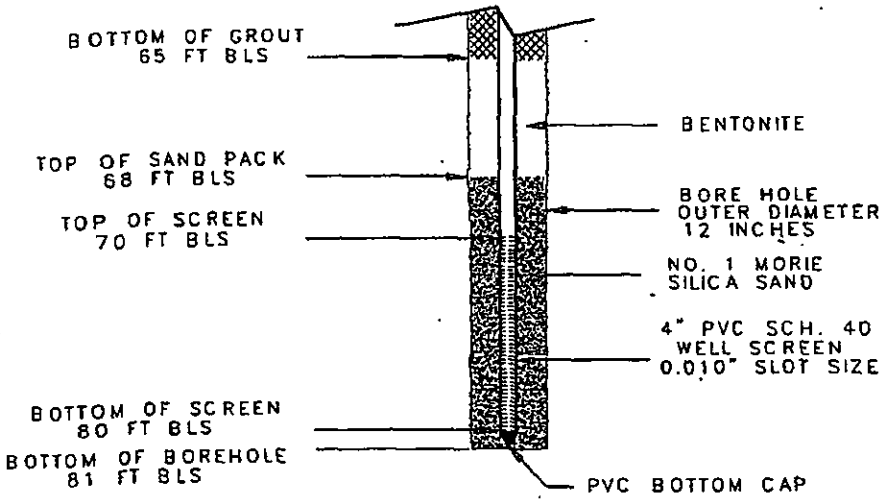
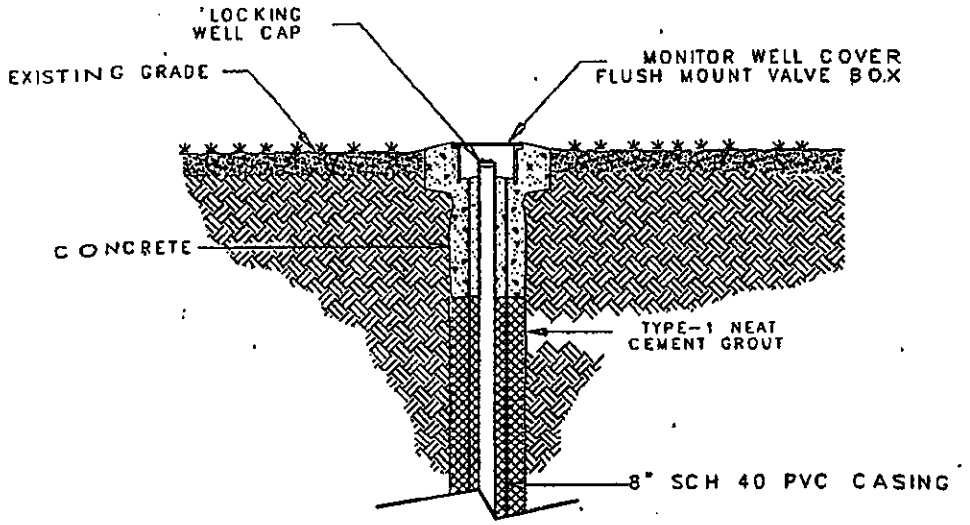
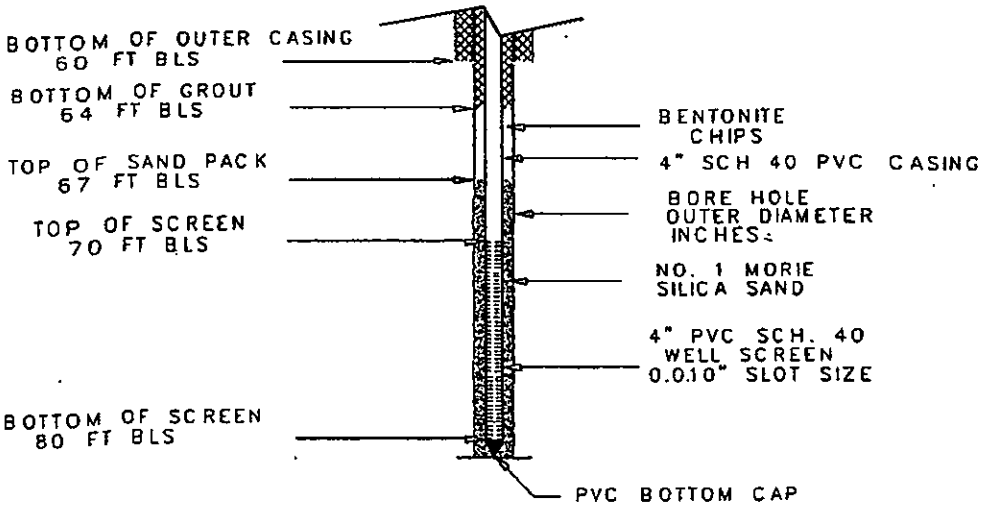


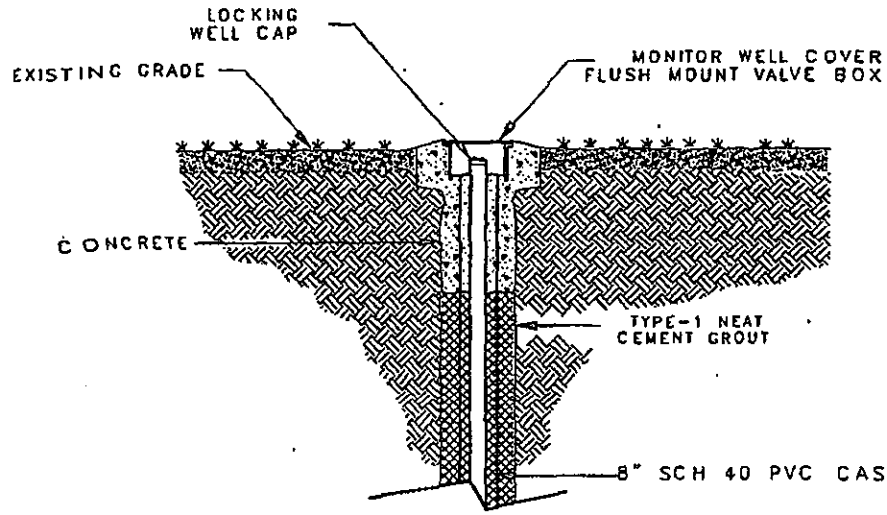


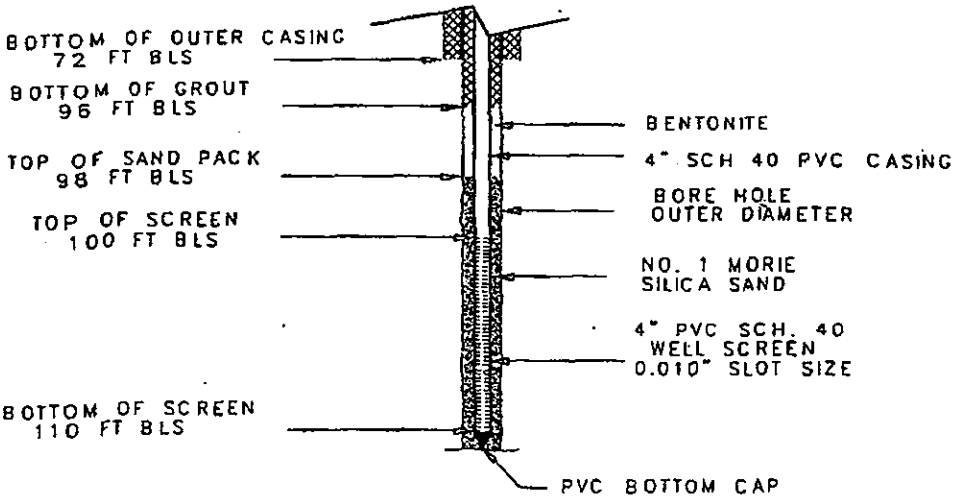
CODY EHLERS GROUP EHE CONSULTING AND SERVICES 101 N. WOODLAND BLVD., SUITE 206 DELAND, FLORIDA 32720	DATE REVISED:
	REVISED BY:
MONITOR WELL MW-C DETAIL	DATE: 9/12/02
	SCALE: NTS
FIGURE 3C DRAWING NO.:	ST SERVICES PIPELINE PEACHTREE ROAD MACON, GA
	DRAWN BY: LCS
	APPROVED BY: AVE



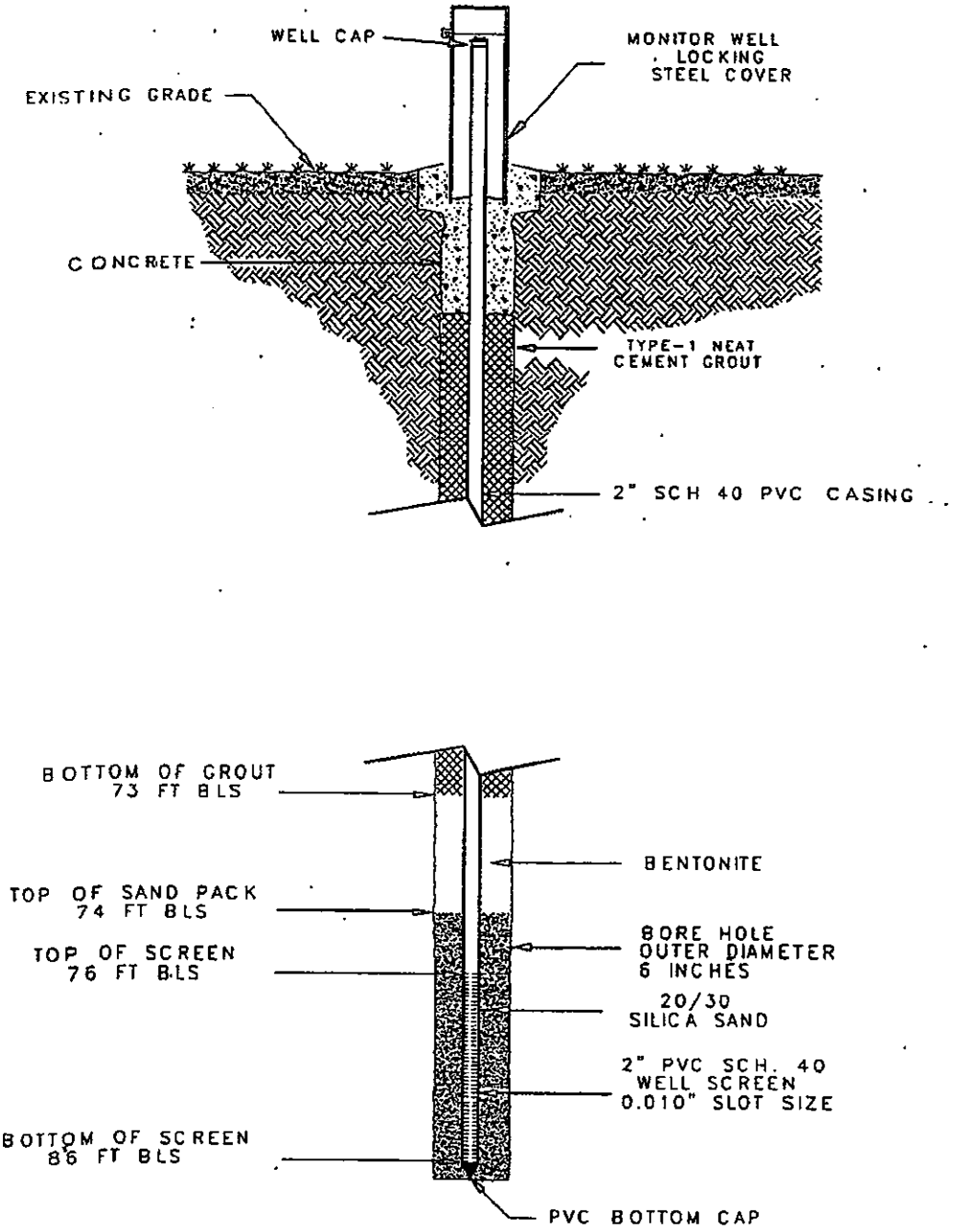


CODY EHLERS GROUP EHE CONSULTING AND SERVICES 101 N. WOODLAND BLVD., SUITE 206 ORLAND, FLORIDA 32720		DATE REVISED:
		REVISED BY:
MONITOR WELL MW-D DETAIL		DATE: 9/12/92 SCALE: NTS
FIGURE 3D DRAWING NO.:	ST SERVICES PIPELINE PEACIN ROAD MACON, GA	DRAWN BY: LGS APPROVED BY: AVK



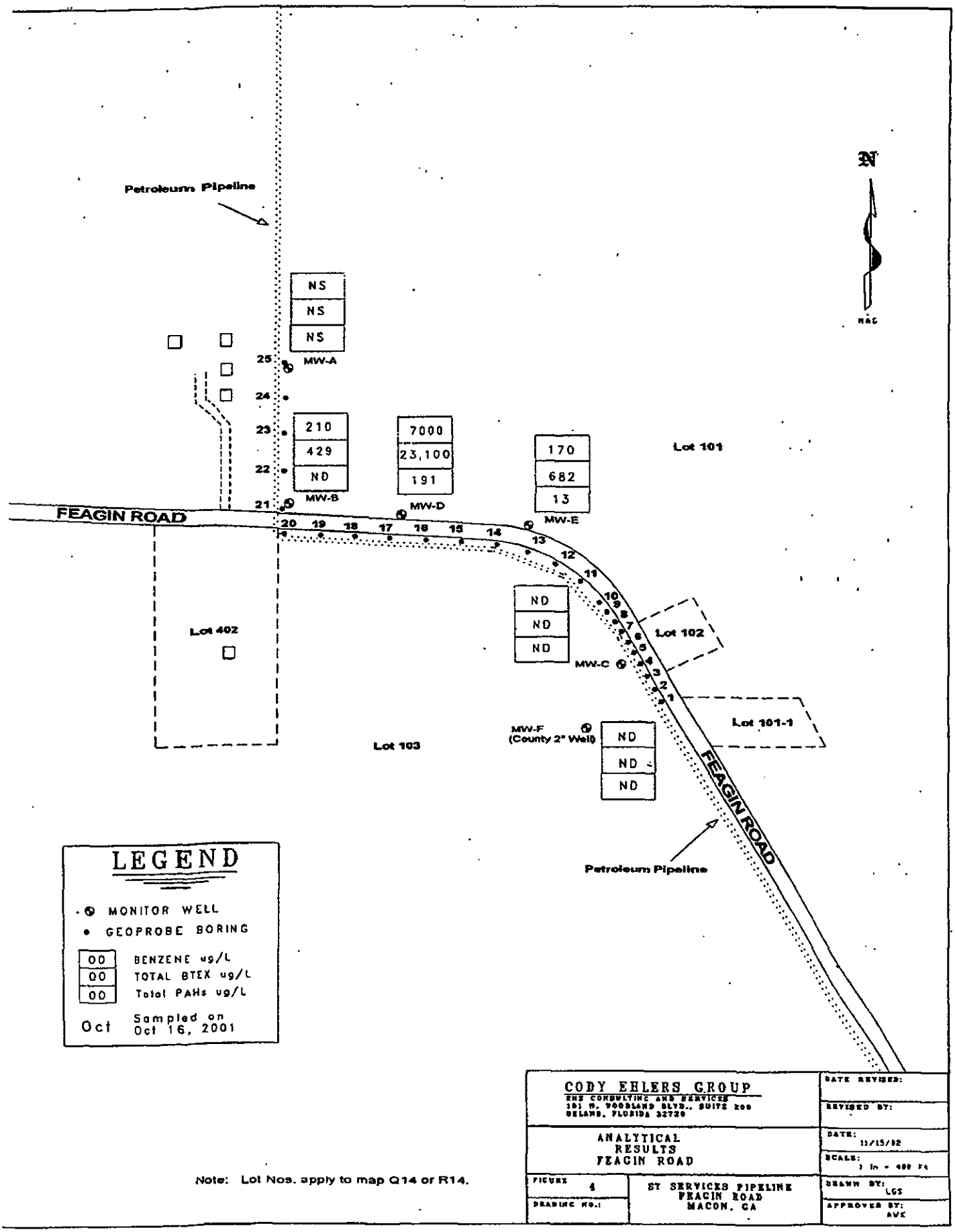


CODY EHLERS GROUP ENV CONSULTING AND SERVICES 191 N. WOODLAND BLVD., SUITE 305 DELAND, FLORIDA 32720		DATE REVISED:
		REVISED BY:
MONITOR WELL MW-E DETAIL		DATE: 9/12/02
		SCALE: NTS
FIGURE 3E DRAWING NO.:	ST SERVICES PIPELINE PEACHN ROAD MACON, GA	DRAWN BY: LGS
		APPROVED BY: AVE



NOTE: WELL INSTALLED BY PRESTON TESTING AND ENGINEERING ON JULY 17, 1995. LOG BASED ON PRESTON DOCUMENTATION IN AUGUST 1995 REPORT.

CODY EHLERS GROUP EHS CONSULTING AND SERVICES 101 N. WOODLAND BLVD., SUITE 206 DELAND, FLORIDA 32720	DATE REVISED: REVISED BY:
MONITOR WELL MW-F DETAIL	DATE: 9/12/02 SCALE: NTS
FIGURE 3F DRAWING NO.:	ST SERVICES PIPELINE PEAGIN ROAD MACON, GA	DRAWN BY: LGS APPROVED BY: AVE


Petroleum Pipeline
NS
NS
NS
MW-A
25
24
23
22
21
210
429
ND
MW-B
7000
23,100
191
MW-D
170
682
13
MW-E
Lot 101
FEAGIN ROAD
20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
Lot 402
ND
ND
ND
MW-C
Lot 102
Lot 101-1
MW-F
(County 2" Well)
ND
ND
ND
Lot 103
FEAGIN ROAD
Petroleum Pipeline
N
MAG
LEGEND
MONITOR WELL
GEOPROBE BORING
00 BENZENE ug/L
00 TOTAL BTEX ug/L
00 Total PAHs ug/L
Oct Sampled on Oct 16, 2001
Note: Lot Nos. apply to map Q14 or R14.
CODY EHLERS GROUP
ENE CONSULTING AND SERVICES
101 N. WOODLAND BLVD., SUITE 208
DELAND, FLORIDA 32720
ANALYTICAL RESULTS FEAGIN ROAD
FIGURE 4
DRAWING NO.:
ST SERVICES PIPELINE
FEAGIN ROAD
MACON, GA
DATE REVISED:
REVISED BY:
DATE: 11/15/02
SCALE: 1 In = 400 Ft
DRAWN BY: LGS
APPROVED BY: AVK

TABLES

TABLE 1
SOIL ANALYTICAL DATA SUMMARY

ST Services
Feagin Road, Macon, GA

LOCATION	DEPTH (ft bls)	DATE SAMPLED	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	TOTAL BTEX	MTBE	NAPHTHALENE	METHYL NAPHTHALENE	Total PAH (EPA Method 82600)	DRO (C10-C24)	TOC
MW-A	50-53 65-67	6/5/2002 6/27/2002	210 ---	72 ---	1 ---	146 ---	429 ---	ND ---	ND ---	ND ---	ND ---	ND ---	--- ND
MW-B	50-55 74-76	6/3/2002 7/30/2002	300 ---	11,000 ---	7,900 ---	39,000 ---	58,200 ---	ND ---	1,900 ---	10,100 ---	12,000 ---	510,000 ---	--- ND
MW-E	60-65 103-105	6/6/2002 8/1/2002	ND ---	ND ---	110 ---	1,500 ---	1,610 ---	ND ---	ND ---	141 ---	440 ---	5,200 ---	--- ND

NOTE: All units are ug/kg. ND = not detected NS= not sampled

Case 01-01139-AMC Doc 20984-2 Filed 03/13/09 Page 34 of 63

TABLE 2
GROUNDWATER ANALYTICAL DATA SUMMARY

ST Services
Feagin Road, Macon, GA

MONITOR WELL	DATE SAMPLED	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES	TOTAL BTEX	MTBE	NAPHTHALENE	METHYL NAPHTHALENE	Total PAH (EPA Method 610)	TOTAL LEAD
MW-A	8/28/2002	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-B	8/28/2002	210	72	1	146	429	ND	ND	ND	ND	74
MW-C	8/28/2002	ND	ND	ND	ND	ND	ND	ND	ND	ND	280
MW-D	8/28/2002	7,000	8,600	1,100	6,400	23,100	ND	140	51	191	54
MW-E	8/28/2002	170	250	52	210	682	ND	4	9	13	68
MW-F	8/28/2002	ND	ND	ND	ND	ND	ND	ND	ND	ND	43

NOTE: *All units are ug/L.* *ND = not detected* *NS = not sampled*

Case 01-01139-AMC Doc 20984-2 Filed 03/13/09 Page 35 of 63

TABLE 3
GROUNDWATER ELEVATIONS

ST Services
Feagin Road, Macon, GA

MONITOR WELL	TOC ELEVATION ft. (relative)	DATE GAUGED	TOTAL DEPTH ft	DEPTH TO WATER ft	WATER LEVEL ELEVATION
MW-A	95.0	8/27/2002	71.2	70.72	24.28
MW-B	100.0	8/27/2002	79.7	77.34	22.66
MW-C	104.9	8/27/2002	98.85	92.52	12.38
MW-D	100.3	8/27/2002	76.5	71.06	29.24
MW-E	105.2	8/27/2002	110.0	100.65	4.55
MW-F	107.2	8/27/2002	88.7	79.25	27.95

ST SERVICES
A KANEB COMPANY

Memorandum

TO: Jim Siciliano
Jim Tidmore

FROM: Dylan T. Morgan DTM 12-17-01

CC: Dave Baker
Eddie Nobles
Marshal Timberlake

DATE: December 14, 2001

SUBJECT: ST Macon – Barnes Ferry Road Subdivision Release

EXECUTIVE SUMMARY

SOURCE IDENTIFICATION REPORT / CONTAMINATION ASSESSMENT REPORT (SICAR)
Clayton Group Services (Oct. 26, 2001)

This report documents the rediscovery of a JP-4 Jet Fuel release, which occurred during the 1980's along Barnes Ferry Road adjacent to the ST Macon pipeline to Robbins AFB. This report stems from an old GA EPD case, which was resurrected in October of this year, involving the contamination of a private well due north of the pipeline. The subject area, Barnes Ferry subdivision, is approximately one mile southeast of the terminal in a rural area adjacent to the Robbins pipeline.

Clayton was hired by GA EPD to perform the SICAR and subsequently installed four monitor wells just north of the pipeline in the Barnes Ferry Road subdivision. One of the four monitor wells, installed 100 feet north of our pipeline, contained over a foot of free product. The remaining three monitor wells all have dissolved hydrocarbon compounds above the allowable state and federal MCLs. The size of the dissolved hydrocarbon plume is approximately 1250 feet by 650 feet and is not delineated horizontally or vertically. The free product plume is not as large (according to the report) and may parallel the pipeline to the east, which is the apparent ground water flow direction. The ground water table is at 68-70 feet BLS.

From the desk of...

Dylan T. Morgan
Manager – Environmental, Health & Safety
ST Services
6531 Evergreen Avenue
Jacksonville, Florida 32208

PH: (904) 355-9675
FAX: (904) 354-2811
EMAIL: dylan_morgan@stservices.net
Web Page: www.stservices.net

ST

The product in the monitor well was finger printed as a degraded JP-4. The pipeline was in continuous JP-4 service since it was constructed in 1963 until April of 1994 when it was changed to JP-8 service. (Kaneb bought ST Macon from WR Grace in 1993.)

The report documents many "interviews" in Appendix C that Clayton collected for the report. Many were recorded during the installation of the monitor wells in the subdivision, when Clayton interviewed residents verbally. Several residents recalled free product being observed in the ditch along Barnes Ferry Road during the 1980's. According to the report, no known remediation, assessment or abatement was or has been performed. The interviews document that two of the residents (Mrs. Parks and Mrs. Pearson) had their private potable wells replaced in the 1980's by W.R. Grace after they had been contaminated.

There are a total of 12 private potable wells in the subdivision, three of which have been replaced due to being contaminated. Currently, five of the twelve occupied residences are connected to city water, which is available to connect to all of the residences. All of the private potable wells were sampled in October and November 2001. The results were non-detect in all but one of the private wells*, which is currently being used only for irrigation and is 105 feet in depth.

The report also documents an interview with the attorney Horace McSwain, III. Mr. McSwain represented two of the Barnes Ferry residents and filed suit against W.R. Grace / ST Services in 1984. He also was the attorney for the McClendon case against Grace on a different property located on Feagin Road several miles down the pipeline toward Robbins. McSwain stated in the interview that the former ST Macon Terminal Manager, Mell James had "identified all known leaks on a map of the pipeline route..." This information was reported to GA EPD in 1984 as well as the Health department.

A local water well driller was also interviewed and stated that he had replaced many private wells in the subdivision due to petroleum contamination and also observed free product in the ditch adjacent to the subdivision in the 1980s.

*New information not contained in the SICAR. Analytical data obtained directly from GAEPD.

Note: This SICAR by Clayton contains a large volume of information, which will be used as the assessment of Barnes Ferry Road continues. The assessment / investigation of this area as is now being required by GA EPD (12/11/01 Meeting with ST and GA EPD).

Georgia Department of Natural Resources

205 Butler Street, S.E., East Floyd Tower, Atlanta, Georgia 30334
Lonice C. Barrett, Commissioner
Harold F. Reheis, Director
Environmental Protection Division
(404) 656-4713

Apply To:
Georgia Geologic Survey
Room 400
19 Martin Luther King Jr. Drive, S.W.
(404) 656-3214

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DEC 26 2001
JACKSONVILLE, FLORIDA

certified mail
7000 0600 0023 8148 1082

December 20, 2001

Mr. Dylan Morgan
ST Services
6531 Evergreen Avenue
Jacksonville, Florida 32208

Subject: Notice of Violation
Discharge of Petroleum Hydrocarbons to Ground Water
ST Services Pipe Line
Barnes Ferry Road Residential Area - Intersection of Barnes Ferry Road with Grayer Drive and Smithfield Road
Warner Robbins, Georgia

Dear Mr. Morgan:

As you are aware, Clayton Group Services, under contract to the Georgia Environmental Protection Division (EPD), conducted a source identification and contamination assessment investigation at the residential area referenced above. The investigation is described in an October 26, 2001 report, prepared by Clayton Group Services, titled, "Source Identification Report/Contaminant Assessment Report (SICAR)". Ground-water in the area was found to contain both free-phase and dissolved-phase hydrocarbons. The hydrocarbon compounds, benzene, toluene, ethylbenzene and xylenes (BTEX) are present in ground water at concentrations exceeding the state and federal Maximum Contaminant Level (MCL) as defined by the Georgia Safe Drinking Water Act and Rules. Based on the results of the investigation, the EPD concludes that petroleum hydrocarbon compounds in excess of the MCL have been released from the ST Services pipeline to the ground water. This constitutes a release of a toxic pollutant to the waters of the State of Georgia in violation of the Water Quality Control Act and Rules. The EPD requires that ST Services remediate the contamination.

The EPD's requirements for investigation and remediation of petroleum releases from pipelines are consistent with the EPD Underground Storage Tank Management Rules (Chapter 391-3-15). The following items will need to be completed.

(1) Notify all property owners in the residential area that a release to the ground water has occurred and provide the results of any ground-water and/or soil testing on their property.

(2) Identify and locate on a map all private water supply wells (drinking and irrigation) and

public water supply wells within one-half and two miles of the residential area, respectively.

(3) Complete additional investigation to determine the horizontal and vertical extent of soil and ground-water contamination.

(4) Prepare and submit a report outlining the results of the investigation and recommendations for additional work that may be needed.

(5) Prepare and submit a Corrective Action Plan (CAP) for soils and ground water. Because some residents are supplied by water wells, the EPD will require that ground-water contamination be remediated to the MCL and soils to the concentrations indicated in Table A, column one of the UST rules (391-3-15-.09). Alternative soil and ground-water cleanup levels can be proposed, based on a risk-based assessment approved by the EPD, if all the residences in the area are connected to a public water supply. If a resident is not connected to the public water supply, the EPD will require that their well, at a minimum, be sampled on a monthly basis until cleanup levels are obtained in the area. The EPD will request that ST Services offer an alternative drinking water supply in the event that any resident's water supply well is found to contain petroleum contaminants above MCLs.

A work plan for additional investigation and a proposed time line for completing the items described above should be submitted by January 31, 2002. If you have any questions please contact Jim Guentert or me.

Sincerely,

B. Roger Carter
Assistant Branch Chief

cc: File

Georgia Department of Natural Resources

205 Butler Street, S.E., East Floyd Tower, Atlanta, Georgia 30334
Lonice C. Barrett, Commissioner
Harold F. Reheis, Director
Environmental Protection Division
(404) 656-4713

Reply To:
Georgia Geologic Survey
Room 400
19 Martin Luther King Jr. Drive, S.W.
(404) 656-3214

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DEC 26 2001
JACKSONVILLE, FLORIDA

December 20, 2001

Mr. Dylan Morgan
ST Services
6531 Evergreen Avenue
Jacksonville, Florida 32208

Subject: ST Services Pipeline, Macon, Georgia

Dear Mr. Morgan:

As we discussed during a December 11, 2001 meeting, the EPD has information which suggests that in addition to the confirmed release at the Barnes Ferry Road residential area, there may have been leaks at two other areas along the ST Services pipeline. The EPD requests that ST Services conduct an investigation at both areas to determine if there has been a release to the soils and ground water.

The first area was reported to the EPD by ST Services in a November 12, 1998 letter. According to the letter, ST Services received a call on November 8, 1998 from a contractor installing a water main along Barnes Ferry Road, approximately 1.5 miles from the intersection with State Route 247. The contractor had detected petroleum odors in the soils while excavating along the east side of Barnes Ferry Road and approximately 30 to 60 feet from the pipeline. It is our understanding that the excavated area had already been backfilled when ST Services personnel arrived and subsequent pressure testing of the line indicated that there was no active leak at that time.

The second area of concern is along Feagin Road. ST Services has submitted correspondence from 1981 and 1982 which indicates that a leak occurred in the pipeline along Feagin Road. It appears that petroleum hydrocarbons from this leak may have impacted a private well owned by Mrs. Magnolia McLendon. It is our understanding that the W.R. Grace Company, the owner of the pipeline at that time, either replaced Mrs. McLendon's well or connected her to the public water supply.

ST Services should prepare an investigation work plan for the two areas for EPD review. As you are aware, the EPD's requirements for investigation and remediation of petroleum releases from pipelines are consistent with the EPD Underground Storage Tank Management Rules (Chapter 391-3-15). Also, the EPD requests that ST Services provide a map showing the locations and a history of all confirmed, suspected and/or reported releases from the ST Services pipeline from the terminal on Hawkinsville Road to the

Warner Robbins Air Force Base.

The work plan and pipeline release history should be submitted by February 28, 2002. If you have any questions please contact Jim Guentert or me.

Sincerely,

B. Roger Carter
Assistant Branch Chief

cc: File

ST Matters

Georgia Department of Natural Resources

205 Jesse Hill Jr. Dr., S.E., East Floyd Tower, Atlanta, Georgia 30334
Lonice C. Barrett, Commissioner
Harold F. Reheis, Director
Environmental Protection Division
(404) 656-4713

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FEB 14 2002
JACKSONVILLE FLORIDA

February 8, 2002

Dylan Morgan
ST Services
6531 Evergreen Avenue
Jacksonville, Florida 32208

Subject: Site Investigation Work Plan, ST Services, Barnes Ferry Road – Area 1, Bibb County, Georgia

Dear Mr. Morgan:

We have reviewed the January 30, 2002 work plan submitted by Cody Ehlers Group (CEG), on behalf of ST Services, for the site referenced above. The work plan includes the completion of a series of Geoprobe™ borings along the pipeline and a group of monitoring wells and deep soil borings in and around the residential area. CEG proposes using mud-rotary to complete the soil borings and monitoring wells because of the problem that the previous drilling contractors had advancing hollow-stem augers to the required depth of 80+ feet at the site. We approve of the work plan with the modification listed below and the understanding that additional field work may be needed after completing this investigation phase, in order to develop a corrective action plan (CAP) for this site.

(1) An additional monitoring well should be installed north of PW-4, preferably in Lot 105H or Lot 104C.

(2) An additional monitoring well should be installed on the south side of Barnes Ferry Road, approximately 300 feet east of MW-6.

(3) The CEG work plan states that a sensitive receptor survey will be completed. This survey should include locating all private and public wells within one-half and two-mile radius of the site, respectively.

CEG's summary of previous work at the site makes no mention of the additional private wells (P7-P12) sampled by Clayton Group Services on November 28, 2001. EPD faxed the data and a preliminary well location map to ST Services on December 6, 2001. Enclosed is a December 12, 2001 letter report and final well location map prepared by Clayton Group Services and submitted to EPD.

It is our understanding that ST Services is currently preparing property access agreements and notification letters. You have indicated that ST Services will begin residential well

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sampling on a periodic basis as soon as the access agreements are in place. ST Services should also begin interim LNAPL removal as soon as possible.

We request that ST Services submit a schedule that at a minimum includes the anticipated dates for the following:

(1) initiation and completion of the field investigation
(2) submittal of the investigation report
(3) submittal of a CAP

Please submit the schedule by March 8, 2002. Contact Jim Guentert if you have any questions or comments.

Sincerely,

H. Roger Carter
Assistant Branch Chief

Cc: file
cc: CEC - A. Kent
ST Dallas - A. Owen
A. Timberlake - Birmingham, AL

cc: ENV, ST [illegible] DALLAS
A. Kent, CEG, Oakland

Georgia Department of Natural Resources

2 Martin Luther King Jr. Drive, S.E., East Tower, Atlanta, Georgia 30334-9000

Reply To:
Georgia Geologic Survey
4th Floor, Suite 400
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MAR 2 8 2002

JACKSONVILLE, FLORIDA

March 15, 2002

Dylan Morgan
ST Services
6531 Evergreen Avenue
Jacksonville, Florida 32208

Subject: Site Investigation Work Plan, ST Services, Area 2 – Barnes Ferry Road, Bibb County, Georgia

Dear Mr. Morgan:

We have reviewed the February 2002 work plan submitted by Cody Ehlers Group (CEG) on behalf of ST Services, for the site referenced above. CEG proposes to complete Geoprobe™ borings, on either side of Barnes Ferry Road, every 50 feet over a distance of approximately 800 feet along the pipeline. All borings will be at least 10 feet deep. A minimum of four borings will be advanced to 50 feet and ground-water samples collected if the water table is encountered. The investigation area covers the areas that were reported as having a hydrocarbon odor in the soil during installation of the water main in 1998. We approve of the work plan with the modifications listed below and with the understanding that additional field work may be needed after completing this investigation phase.

(1) Soil samples should be collected at two-foot intervals to a depth of 10 feet and at a maximum of five-foot intervals to boring completion.

(2) The line of borings on one side of Barnes Ferry Road should be offset 25 feet from the borings on the opposite side, which effectively reduces the distance between the borings from 50 feet to 25 feet without increasing the number of borings.

Please submit a schedule by March 29, 2002 that includes anticipated dates for the initiation of the field investigation and submittal of the investigation report. Contact Jim Guentert or me if you have any questions or comments.

Sincerely,

B. Roger Carter
Assistant Branch Chief

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cc: file

Case 01-01139-AMC Doc 20984-2 Filed 03/13/09 Page 45 of 63

A. Kent, CEG, Deland

Georgia Department of Natural Resources

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Lonice C. Barrett, Commissioner
Harold F. Reheis, Director
Environmental Protection Division
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MAR 28 2002

JACKSONVILLE FLORIDA

March 15, 2002

Dylan Morgan
ST Services
6531 Evergreen Avenue
Jacksonville, Florida 32208

Subject: Site Investigation Work Plan, ST Services, Area 3 - Feagin Road, Bibb County, Georgia

Dear Mr. Morgan:

We have reviewed the February 2002 work plan submitted by Cody Ehlers Group (CEG) on behalf of ST Services, for the site referenced above. CEG proposes to complete a Geoprobe™ boring every 50 feet along approximately 1000 feet of the pipeline. The Geoprobe™ borings will be a minimum of 10 feet deep. In addition, three deeper borings will be drilled using mud-rotary techniques and completed as monitoring wells at a depth of 60-80 feet below ground level. We approve of the work plan with the modifications listed below and with the understanding that additional field work may be needed after completing this investigation phase.

(1) Soil samples should be collected at two-foot intervals to a depth of 10 feet and at a maximum of five-foot intervals to boring completion.

(2) Two additional monitoring wells are needed. Monitoring wells should be installed along the north side of Feagin Road approximately 200 feet and 400 feet east of proposed monitoring well MW-B. In order to evaluate for the presence of free-phase hydrocarbons, all monitoring wells should be installed so that a portion of their screens are above the water table.

(3) Water supply wells, located in the study area depicted in Figure 2, should also be sampled.

Please submit a schedule by March 29, 2002 that includes anticipated dates for the initiation of the field investigation and submittal of the investigation report. Contact Jim Guentert or me if you have any questions or comments.

Sincerely,

B. Roger Carter

B. Roger Carter
Assistant Branch Chief

cc: file

MARTIN, SNOW, GRANT & NAPIER
ATTORNEYS AT LAW
700 GEORGIA FEDERAL BUILDING
POST OFFICE BOX 4987
MACON, GEORGIA 31208

TELEPHONE 912/743-7051

GEORGE C. GRANT
HENDLEY V. NAPIER
T. BALDWIN MARTIN, JR
CUBBEDGE SNOW, JR
CHARLES M. CULVER
CHARLES M STAPLETON
REMER C. DANIEL
WENDELL L. BOWDEN
EDWARD J. HARRELL
JOHN C. EDWARDS
J. KENNETH WALKER

R NAPIER MURPHY
ROBERT R. GUNN, II
JOHN T McGOLDRICK, JR.
DON R. GORDON
CUBBEDGE SNOW, III
BEVERLY B MARTIN

FRED R MARTIN (1890-1946)

OF COUNSEL
T. BALDWIN MARTIN
CUBBEDGE SNOW

August 10, 1982

Mr. Phil Cowan
CNA
P. O. Box 3200
Atlanta, GA 30302

RE: Claim No. : 23-244717K2
Insured : W. R. Grace
Claimant : Magnolia McLendon

Dear Phil:

The plaintiffs attorney in the above-captioned case called me last Friday and mentioned that there may be other claims arising out of our insured leaking pipe line. Apparently, there is a subdivision further up the pipe line from the plaintiffs house where the residence are now claiming their water is polluted. I do not know whether their has been any test of the water in that area but I spoke to Melvin James, our terminal manager, and he insist there is no leak on that part of the pipe line. He also tells me the pipe line was replaced in that area four or five years ago.

I have filed interrogatories and a request for production for documents on the plaintiff to make sure we have them pin down as to the claims they are making. I will file our interrogatory answers as soon as I receive the verification form signed by Mr. James.

We have had to admit to the plaintiff that the pipe line did leak in the area of the plaintiff's property back in 1980. Mr. James informs me there was a B.B. sized leak adjacent to her land which was repaired. Neither Mr. James nor Don Pyle, our expert, think that leak could have caused the extensive inundation to plaintiffs property which he is suing about. I am waiting to get a report from Mr. Pyle as to what he thinks we need to do from an engineering standpoint in this suit and as soon as I hear from him, I will pass his recommendations on to you.

Please call me if you have any questions.

Very truly yours,

ROBERT R. GUNN, II

RRG,II/la
cc: Mr. Dale W. Wells
Mr. Harry Bauer
Mr. Melvin James

MARTIN, SNOW, GRANT & NAPIER
ATTORNEYS AT LAW
700 GEORGIA FEDERAL BUILDING
POST OFFICE BOX 4987
MACON, GEORGIA 31208

TELEPHONE 912/743-7051

GEORGE C. GRANT
HENDLEY V. NAPIER
T. BALDWIN MARTIN, JR.
CUBBEDGE SNOW, JR.
CHARLES M. CULVER
CHARLES M. STAPLETON
REMER C. DANIEL
WENDELL L. BOWDEN
EDWARD J. HARRELL
JOHN C. EDWARDS
J. KENNETH WALKER

R. NAPIER MURPHY
ROBERT R. GUNN, II
JOHN T. McGOLDRICK, JR.
DON R. GORDON
CUBBEDGE SNOW, III
BEVERLY B. MARTIN

FRED R. MARTIN (1890-1946)

OF COUNSEL
T. BALDWIN MARTIN
CUBBEDGE SNOW

August 11, 1982

Mr. Phil Cowan
CNA
P. O. Box 3200
Atlanta, GA 30302

RE: Claim No. : 23-244717K2
Insured : W. R. Grace
Claimant : Magnolia McLendon

Dear Phil:

Enclosed is a letter I received from Don Pyle after his inspection of the pipeline in Macon. I agree we should have our own engineers do soil and water tests on the plaintiff's property. I feel certain the plaintiff's attorney will cooperate with us. I would recommend hiring the firm of Tamplin & Sherrill here in Macon. Mr. Pyle mentioned a chemical testing lab in Atlanta who could test the soil and water samples and I will get the name of that company from him. As far as the pressure tests on the pipe, I do not think that would serve any purpose, since I understand about 4,000 feet of pipe has been replaced since 1980 in the area of Feagin Road. Thus, the pressure test would only show if we had a leak now as opposed back to 1980 when the plaintiff was apparently going to claim her problems started.

I am copying this letter to Mr. Wells in Texas so he can let me have his thoughts.

I informed you the plaintiff's attorney is claiming there is still a leak somewhere up the pipeline from the plaintiff's property and that the residents of a small subdivision are complaining about their water. I discussed this with Mr. James and he thinks the complaints are likely to be the results of these residents having heard about the plaintiff's problems and they have detected no leak on any other portion of the line.

Please let me know if you want me to start having further soil and water tests done.

Very truly yours,

ROBERT R. GUNN, II

RRG,II/nd

Enclosure

cc: Mr. Dale W. Wells
Mr. Harry Bauer
Mr. Melvin James

D. PYLE ASSOCIATES, INC.
P.O. Box 452, Tucker, Georgia 30084
(404) 458-7444

August 9, 1982

Mr. Robert R. Gunn, II
Martin, Snow, Grant & Napier
P. O. Box 4987
Macon, Georgia 31208

RE: S. T. Services - Macon, Georgia
JP-4 Fuel Pipeline

Dear Mr. Gunn:

It was a pleasure to meet with you and Mr. Melvin James on Wednesday, August 4, 1982, concerning the above mentioned pipeline.

After reviewing the information and data submitted to us, it is interesting to note that both laboratory reports on well water tests do not indicate a presence of JP-4 fuel but do show contanimation with lighter hydrocarbons such as gasoline. It is our understanding that ST Services' pipeline transports only JP-4 jet fuel and that the pipeline is not presently and has not previously been used to transport gasoline or other petroleum products.

Since well water tests were made in August and September of 1981, you may want to consider obtaining water samples from the water well in question and other water wells near this location for further testing and comparison. In addition, I would recommend that you think about performing some more soil tests at the point of the previous pipeline leak and other locations for comparison purposes.

If it is decided to pressure test the pipeline, I suggest this be done by isolating sections of the pipeline and subjecting each section to one and one-half (1½) times the operating pressure for a period of twenty-four (24) hours using calibrated pressure and temperature recorders as recommended by the American Petroleum Institute.

I will be glad to further discuss this project with you at your convenience.

Very truly yours,

D. PYLE ASSOCIATES, INC.

Donald S. Pyle

Donald S. Pyle, P. E.

DSP:alb

Attachment 2(d)

STS AGREEMENT AND PLAN OF MERGER

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STS AGREEMENT AND PLAN OF MERGER

STS AGREEMENT AND PLAN OF MERGER dated December 21, 1992 by and between GRACE ENERGY CORPORATION, a Delaware corporation having executive offices at Two Galleria Tower, Suite 1500, 13455 Noel Road, Dallas, Texas 75240-6681, SUPPORT TERMINAL SERVICES, INC., a Delaware corporation, STANTRANS, INC., a Delaware corporation, STANDARD TRANSPIPE CORP., a Delaware corporation, each having executive officers at 17304 Preston Road, Suite 1000, Dallas, Texas 75252, and KANEB PIPE LINE OPERATING PARTNERSHIP, L.P., a Delaware limited partnership, NSTS, INC., a Delaware corporation, and NSTI, INC., a Delaware corporation, each having executive offices at 2400 Lakeside Boulevard, Suite 600, Richardson, Texas 75082.

In consideration of the mutual covenants and agreements herein contained, the parties hereto agree as follows:

ARTICLE 1

Definitions

As used in this Agreement, the following terms have the meanings set forth in this Article 1. All Article, Section, Exhibit and schedule numbers and references used herein refer to Articles and Sections of this Agreement and Exhibits and schedules attached hereto or delivered simultaneously herewith, unless otherwise specifically described.

1.1 "Affiliate" or "affiliate" of a specified person or entity means any officer, director, employee or agent of, or person

or entity controlling, controlled by, or under common control with such specified person or entity.

1.2 "This Agreement" or "this Agreement" means this STS Agreement and Plan of Merger.

1.3 "Ancillary Agreements" means the following agreements:

(a) Employee Benefits Agreement;

(b) Tax Procedures Agreement; and

(c) Insurance Procedures Agreement.

1.4 "Arbitrator" has the meaning specified in Section 5.03(b).

1.5 "Closing" means the consummation of the transactions contemplated by this Agreement.

1.6 "Closing Date" means the date on which the Closing occurs.

1.7 "Closing Statement" has the meaning specified in Section 5.02.

1.8 "Code" has the meaning specified in Section 6.10.

1.9 "Commonly Controlled Entity" has the meaning specified in Section 6.10.

1.10 "Confidential Information Memorandum" and "Supplemental Information I" means the Confidential Information Memorandum and Supplemental Information I, each dated August 1992, prepared by Kidder, Peabody & Co. Incorporated regarding the sale of STS.

1.11 "Confidentiality Agreement" means the letter agreement dated September 21, 1992, between the General Partner and GEC and Grace regarding the keeping confidential of certain information furnished to the General Partner in connection with its evaluation of an acquisition of STS.

1.12 "Corporation Executives" has the meaning set forth in the first paragraph of Article 6 hereof.

1.13 "Corporations" means STS and the STS Subsidiaries.

1.14 "DGCL" means the General Corporation Law of the State of Delaware.

1.15 "DOJ" means the United States Department of Justice.

1.16 "Employee Benefits Agreement" means the Employee Benefits Agreement of even date herewith entered into between GEC and OLP relating to retirement, employee benefit and similar plans and programs for the Corporations' employees, and other personnel matters related to the Corporations.

1.17 "Environmental Law" means any law, regulation, rule, ordinance, by-law, or order of any Governmental Authority, which relates to or otherwise imposes liability, obligations, or standards with respect to pollution or the protection of the environment.

1.18 "ERISA" means the Employee Retirement Income Security Act of 1974, as amended.

1.19 "Estimated Purchase Price" has the meaning set forth in Section 4.02(h).

1.20 "Facilities" means the liquid storage facilities, pipelines, buildings and improvements owned or leased by the Corporations.

1.21 "FTC" means the Federal Trade Commission.

1.22 "GEC" means Grace Energy Corporation, a Delaware corporation.

1.23 "GEC Executives" has the meaning set forth in the first paragraph of Article 6 hereof.

1.24 "General Partner" means Kaneb Pipe Line Company, a Delaware corporation and the sole general partner of OLP.

1.25 "Governmental Authority" means the government of the United States of America, any state of the United States of America, or any political subdivision thereof, or any agency, board, bureau, department or commission of any of the foregoing.

1.26 "Grace" means W. R. Grace & Co., a New York corporation.

1.27 "Grace Accounting Principles" means the principles contained in Grace's Financial Accounting Policy Statements manual, which has been provided for review by OLP and Price Waterhouse, its independent public accountants.

1.28 "Grace-Conn." means W.R. Grace & Co.-Conn., a Connecticut corporation.

1.29 "Grace Entity" means Grace or any of its subsidiaries or affiliates, except for the Corporations.

1.30 "Guaranty Agreement" means the Guaranty Agreement of even date herewith by Grace-Conn. in favor of OLP and the OLP Corporations.

1.31 "HSR" or "HSR Act" means the Hart-Scott-Rodino Anti-trust Improvements Act of 1976, as amended, and the rules and regulations thereunder.

1.32 "Insurance Procedures Agreement" means the Insurance Procedures Agreement of even date herewith between Grace, Grace-Conn., GEC and OLP regarding certain insurance matters.

1.33 "Legal Entity Balance Sheet" has the meaning specified in Section 5.02.

1.34 "LIBOR Based Rate" means (a) the London Interbank Offered Rate for three months published in The Wall Street Journal, Southwest Edition, for the date hereof, plus (b) 50 basis points.

1.35 "Material Adverse Effect" means a material adverse effect upon the business, financial condition or results of operations of the Corporations taken as a whole.

1.36 "NSTI" means NSTI, Inc., a Delaware corporation and a wholly owned subsidiary of OLP.

1.37 "NSTS" means NSTS, Inc., a Delaware corporation and a wholly owned subsidiary of OLP.

1.38 "OLP" means Kaneb Pipe Line Operating Partnership, L.P., a Delaware limited partnership.

1.39 "OLP Corporations" means NSTS and NSTI.

1.40 "Operations" means the liquid storage, pipeline and related operations presently conducted by the Corporations at the Facilities.

1.41 "Plan" has the meaning specified in Section 6.10.

1.42 "Properties" means the real property owned and leased by the Corporations, as described in Exhibit A.

1.43 "Purchase Price" means (i) $63,000,000 plus (ii) the Working Capital Amount less (iii) $100,000.

1.44 "Reasonable Efforts" shall mean the taking by a party of such action as would be in accordance with reasonable commercial practices as applied to the particular matter in question.

1.45 "Recorded Liens" has the meaning specified in Section 6.13.

1.46 "Scheduled Closing Date" has the meaning specified in Section 3.01.

1.47 "Shares" means the STI Shares, the STP Shares, the STS Shares and the STV Shares.

1.48 "STI" means StanTrans, Inc., a Delaware corporation and a wholly owned subsidiary of STS.

1.49 "STI Effective Time" has the meaning specified in Section 2.03(a).

1.50 "STI Merger" has the meaning specified in Section 2.03.

1.51 "STI Shares" means the issued and outstanding shares of capital stock of STI.

1.52 "STP Shares" means the issued and outstanding shares of capital stock of STP.

1.53 "STP" means Standard TransPipe Corp., a Delaware corporation and a wholly owned subsidiary of STS.

1.54 "STP Effective Time" has the meaning specified in Section 2.02(a).

1.55 "STP Merger" has the meaning specified in Section 2.02.

1.56 "STS" means Support Terminal Services, Inc., a Delaware corporation and a wholly owned subsidiary of GEC.

1.57 "STS Effective Time" has the meaning specified in Section 2.04(a).

1.58 "STS Merger" has the meaning specified in Section 2.04.

1.59 "STS Shares" means the issued and outstanding shares of capital stock of STS.

1.60 "STS Subsidiaries" means STI, STP and STV.

1.61 "STV" means Standard TransPipe (Virginia) Inc., a Virginia corporation and a wholly owned subsidiary of STP.

1.62 "STV Effective Time" has the meaning specified in Section 2.01(a).

1.63 "STV Merger" has the meaning specified in Section 2.01.

1.64 "STV Shares" means the issued and outstanding shares of capital stock of STV.

1.65 "Surviving Intercompany Accounts" has the meaning set forth in Section 5.06.

1.66 "Tax" means any federal, state, local, foreign or other governmental tax, levy, withholding, assessment or other similar governmental charge, including import duties, whether or not measured (in whole or in part) by or imposed upon income, and any interest, penalties, additions to tax and fines assessed on any such tax, levy, withholding, assessment, governmental charge or import duties.

1.67 "Tax Procedures Agreement" means the Tax Procedures Agreement of even date herewith between Grace, Grace-Conn., GEC, OLP and the OLP Corporations regarding certain tax matters.

1.68 "Tax Returns" has the meaning specified in Section 6.23(a).

1.69 "Working Capital Amount" has the meaning specified in Section 5.02.

ARTICLE 2

STI Merger and STS Merger; Consideration

2.01 STV Merger. Upon the terms and subject to the conditions of this Agreement, STV shall merge with and into STP (the "STV Merger").

(a) At the time the STV Merger becomes effective (the "STV Effective Time"):

(i) STV shall be merged with and into STP and the separate existence of STV shall cease.